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What is claimed is:

1. An optical sub-assembly for processing an optical signal, the sub-assembly comprising:

a working path of the optical network;

a first sub-band of the optical signal carried only by the working path;

a protect path of the optical network;

a second sub-band of the optical signal carried only by the protect path;

a first module disposed along the working path for affecting the working path;

and

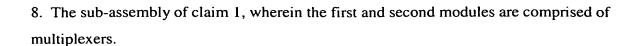
a second module disposed along the protect path for affecting the protect path.

- 2. The sub-assembly of claim 1, wherein the first sub-band is one of a C-band and an L-band, and the second sub-band is the other of a C-band and an L-band.
  - 3. The sub-assembly of claim 1, wherein the first and second modules are comprised of optical amplifiers.

4. The sub-assembly of claim/1, wherein the first and second modules are comprised of band pass filters.

- 5. The sub-assembly of claim 1, wherein the first and second modules are comprised of channel add devices
  - 6. The sub-assembly of claim 1, wherein the first and second modules are comprised of channel drop devices.
- 7. The sub-assembly of claim 1, wherein the first and second modules are comprised of demultiplexers.

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- 9. The sub-assembly of claim 1, wherein the first and second modules are comprised of interleavers.
  - 10. The sub-assembly of claim 1, wherein the first and second modules are comprised of attenuators.
- 11. The sub-assembly of claim 1, wherein the first and second modules are comprised of dispersion compensation modules.
  - 12. A method of processing an optical signal in an optical network, comprising the steps of:
- separating the optical signal into a first sub-band and a second sub-band; routing the first sub-band through a first module and routing the second sub-band through a second module of the same type as the first module; and recombining the first and second sub-bands.
- 20 13. The method of claim 12, wherein the separating step comprises the step of routing the optical signal through an L/C splitter.
  - 14. The method of claim 12, further comprising the step of assigning the first sub-band to one of a working path and a protect path and assigning the second sub-band to the other of the working path and protect path.

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15. The method of claim 12, wherein the routing step further comprises amplifying the first sub-band with the first module and amplifying the second sub-band with the second module.

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16. The method of claim 12, wherein the routing step further comprises filtering the first sub-band with the first module and filtering the second sub-band with the second module.

17. The method of claim 12, wherein the routing step further comprises adding at least one channel to the first sub-band with the first module and adding at least one channel to the second sub-band with the second module.

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- 18. The method of claim 12, wherein the routing step further comprises dropping at least one channel from the first sub-band with the first module and dropping at least one channel from the second sub-band with the second module.
- 19. The method of claim 12, wherein the routing step further comprises demultiplexing the first sub-band with the first module and demultiplexing the second sub-band with the second module.
- 20. The method of claim 12, wherein the routing step further comprises multiplexing the first sub-band with the first module and multiplexing the second sub-band with the second module.
  - 21. The method of claim 12, wherein the routing step further comprises interleaving the first sub-band with the first module and interleaving the second sub-band with the second module.
  - 22. The method of claim 12, wherein the routing step further comprises attenuating the first sub-band with the first module and attenuating the second sub-band with the second module.

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- 23. The method of claim 12, wherein the routing step further comprises compensating for dispersion of the first sub-band with the first module and compensating for dispersion of the second sub-band with the second module.
- 30 24. An optical amplifier node for amplifying an optical signal, the amplifier node comprising:
  - a first amplifier for amplifying only signals from a first sub-band of the optical signal, wherein the signals are carried only by a working path; and



a second amplifier for amplifying only signals from a second sub-band of the optical signal, wherein the signals are carried only by a protect path.

- 25. The optical amplifier node of claim 24, further comprising a sub-band splitter for
  splitting the optical signal into at least two sub-bands.
  - 26. The optical amplifier node of claim 25 wherein the sub-band splitter is an L/C splitter.
- 27. The optical amplifier node of claim 24, further comprising a sub-band combiner for combining at least two sub-bands into the optical signal.
  - 28. The optical amplifier node of claim 27, wherein the sub-band combiner is an L/C combiner.